	Pittsburgh Coal, . 7 Tests			Anthracite Coal, 7 Tests			Coke, 7 Tests		
	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.
Carbon in ash, per cent of total	7.98	3.95	17.90	10.76	2.96	24.80	7.32	3.80	9.55
Carbon burned, per cent of total	92.02	82.10	96.05	89.24	75.20	97.04	92.68	90.45	29.0
Per cent of carbon burned to C02.. .	17.00	11.00	25.00	16.95	7.90	31.50	22.00	14.90	84.9
burned to CO. . .	76.00	65.00	85.00	82.53	68.00	91.50	77.70	71.00	0.60
burned to CH_4. .	4.00	1.00	10.00	0.52	0.30	1.00	0.30	0.10	1.67
Pounds of air per Ib		0.1	1.33		0.2	2.3	.....	0.0	118.
Pounds of air per Ib of combustible . .		3	131.		0	6		5	60
Pounds of air		21.	00		20.	99.		15.	7.30
		00	6.10		00	50		00	10.6
		4.1	8.20		5.7	7.5		6.1	0
		0	7.20		0	0		0	7.60

When the burning gases leave the fuel bed they have an ascensional force, due to their temperature alone, of between 30 and 80 ft per second and are at least 1000° C. hotter than the heating surface of the boiler. As a result the ascending stream of hot gas will be very much smaller than the area of the pass and the firebox, the balance of this area being occupied by cooler eddies of gases chilled by their contact with the heating surface of the boiler and the walls of the settings.

A very interesting illustration of the way gas may flow through a setting was shown on page 709 of *Power,* Nov. 17, 1914. Mr. Morgan B. Sniith, however, has his arrows indicating the course of the gases pointing in the wrong direction. Fig. 169

shows the correct pointing of the arrows. The hot gases from the fire rise straight up to the coking arch, and just below this arch the gases are forced to flow horizontally to the end of the arch where their